



# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7/14/10
NO.		
SHEET	1	OF 1

PROJECT NAME:	EPA Pavillion Drilling	PROJECT NO.:	139-703
FIELD ACTIVITY SUBJECT:	(b)(6) privacy [Landowner name]	(b)(6) privacy [Landowner name]	MW-1
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	(b)(6) privacy [Landowner name]		

0700 Shaw on-site at [REDACTED] MW-1.

0730 Boat longyear arrives on-site.

0800 Held foulgas and TSA.

0825 Begun H+S review w/ T. Prince. Boat re-staging equipment.

0855 Completed site with H+S. Signed report. Boat staging equipment preparing for development.

-Since (well development rig). Will air lift drilling mud settled in bottom of well. Locker - MW-1

1050 Boat backhoe returns from [REDACTED] site. Had pulled culvert and filled trenches.

1050 Person bring rig access to [REDACTED] MW-1.

1030 Began inserting tremie pipe into [REDACTED] MW-1.

1115 Tremie at 180 ft. Bolts incorrect size for discharge. Boat will travel to Riverton and obtain. Other personnel performing clean-up.

1200 Shaw broke for lunch.

1300 Returned to area. Left to check on location of drilling platform at [REDACTED] MW-1.

1350 Arrived back Locker MW-1.

System hooked up for removal of heavy drilling mud. Purpose was to hold back medium if present.

1435 Began first air lift from 180 ft. 125 psi

1520 Began 2nd air lift ~ 300 ft.

1550 ~ 3rd ~ 420 ft.

1625 ~ 4th ~ 540 ft.

1655 ~ 5th ~ 660 ft.

1735 ~ 6th ~ 780 ft.

1800 ~ 7th ~ 900 ft.

1835 ~ 8th ~ 1020 ft. 977 "

1855 Discontinued pump. Well dry. Will pump in Agua Clean tomorrow morning.

1920 Reviewed Boats Daily. Left site.

Diesel fuel - Negs lost.

1655 - 1805 - Rig lost from loose fitting, repacked.

0% LEL, 0.0 ppm VOC, 20.8% O<sub>2</sub>, 0 ppm H<sub>2</sub>S, 0 ppm CO

0% LEL, 0.0 ppm VOC, 20.8% O<sub>2</sub>, 0 ppm H<sub>2</sub>S, 0 ppm CO

## VISITORS ON SITE:

Boat longyear. Russ Otto, Cody Seal, Adam Ensign  
Riley Osther [REDACTED] Brad Gilpin H+S  
EPA - [REDACTED], others Geoprobe Soil/Gas Survey

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

## WEATHER CONDITIONS:

clear, sunny, warm(65°), windy - 0.0.  
clear, sunny, warm(80°), windy - 0.0.

## IMPORTANT TELEPHONE CALLS:

SHAW E&I PERSONNEL ON SITE: D. Kessler, James Wilson, Jenny Price

SIGNATURE: David Kessler

DATE: 7/14/10

EPAPAV0025243



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7/15/10
NO.		
SHEET	1 OF 2	

PROJECT NAME: Pavilion Drilling

FIELD ACTIVITY SUBJECT: Insertion of Aqua-Clear in [REDACTED]

(b)(6) privacy [Land]

PROJECT NO.: L50 139703

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- (b)(6) privacy [Land]
- 0700 Arrived [REDACTED] MW-1. Began paperwork.
    - Held haulage / JSO / Boats safety meeting.
  - 0820 Uncapped discharge lines at wellhead. Measured air quality ~ VOC = 0.0 ppm, LEL = 0%, H2S = 0.0 ppm.
  - 0835 Measured depth to static = > 500 Ft.
  - 0915 Informed Dom D. G. in I/O (EPA - SWNG) about adding Aqua-Clear. Aqua-Clear will be used to break down polymers in mud. He said if must be used, use it. Requested a sample be collected from all additives added to well.
  - 1010 BLV began adding Aqua-Clear. Added 1.5 gal Aqua-Clear / 700 gal water.
  - 1035 Completion of Aqua-Clear addition. BLV began bottom cleaning, not of equipment to Randall. Informed by J. Wilson that he received word from Landowner Mr. Lockett that long exit road will be closed tomorrow morning. Will have to exit site by other road. (Other road has 2 sharp curves, may cause problems w/ large mud system exiting).
    - BLV will have to pump ~6000 gal mud from mud system into remaining TOTL-052 box.
    - BLV said that 700 gal water/Aqua-Clear brought entirely to surface while adding (Did not loose any solution because all water injected at ~970 Ft.)
  - 1130 Returned from lunch. (1300 Broke for lunch)
    - End roll-off bin of cuttings removed, empty one returned. (Will fill w/ mud from mud system)
  - 1445 Began pumping mud from system into roll-off bin. ~6000gal mud. 15m = 5000gal plus extra room in other bins.
  - 1630 Completed pumping. Began to load/prep to move to Randall MW-1
    - Roll-off bin for driver arrives back-on-site w/ full bin. Landfill would not accept cuttings because ~30 gal water drained from box when plug on bottom removed. Repositioned box on Lockett property beside frac tank, open plug, ~20 gallons drained. Will leave open to dry this evening.
    - Driver picked up 3rd, opened btm valve, drained mud.

## VISITORS ON SITE:

Doest Longyear - Russ Oho, Cody Seal, Adam Ensign,  
Riley Oster, John, Brad  
EPA

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

## WEATHER CONDITIONS:

clear, sunny, warm (65°), calm-a.m.  
clear, sunny, hot (90°), slight breeze - p.m.

## IMPORTANT TELEPHONE CALLS:

SHAW E&amp;I PERSONNEL ON SITE: D. Kesslee, Jerry Price, James Wilson

SIGNATURE: David Kesslee

DATE: 7/15/10

EPAPAV0025244



**Shaw**® Shaw Environmental & Infrastructure, Inc.

**FIELD ACTIVITY  
DAILY LOG  
CONTINUATION SHEET**

DAILY LOG	DATE	7 15 10
	NO.	<u>  </u>
SHEET	2 OF 2	

PROJECT NAME: EPA Pavilion Trifling

FIELD ACTIVITY SUBJECT: Injection Aqua-Clear

**DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:**

PROJECT NO.: 139703

(b)(6) privacy [Landowner name]

DS 1715 Will call Wyoming Waste. Director he should be able to return sometime early next week do take to landfill.

1720 Blk 4 left Locker 1 w/ dock rig, Water truck, trailer, etc. to  
(Ex) privacy [Landowner]

180 At [REDACTED] property. Obtained Board Daily.  
Gave Found Food 100% Poultry.

1900 Found FEDX, WPS in Livermore

Fees Hrs: Mon-Fri 9:00-5:30

Sat 10-12:00

ups



# AQUA-CLEAR® PFD

Phosphate-Free Dispersant

<b>Description</b>	AQUA-CLEAR® PFD concentrated liquid polymer dispersant provides superior mud and sediment removal from the producing formation and gravel pack. This product is also a highly effective mud thinner. AQUA-CLEAR PFD dispersant contains no phosphates.						
<b>Applications/Functions</b>	<ul style="list-style-type: none"><li>• Can disperse mud, sediment and clay from the producing formation and gravel pack in the screened interval.</li><li>• Can reduce viscosity and gel strength of drilling fluids</li></ul>						
<b>Advantages</b>	<ul style="list-style-type: none"><li>• NSF/ANSI Standard 60 certified</li><li>• Helps reduce development time</li><li>• Helps increase well yield and capacity</li><li>• Safe to use on most plastics, rubber and metals</li><li>• Non-fermenting</li><li>• Helps reduce pumping costs</li></ul>						
<b>Typical Properties</b>	<table><tr><td>• Appearance</td><td>straw colored liquid</td></tr><tr><td>• Specific gravity</td><td>1.2 to 1.4</td></tr><tr><td>• pH (neat)</td><td>6.5 to 7.5</td></tr></table>	• Appearance	straw colored liquid	• Specific gravity	1.2 to 1.4	• pH (neat)	6.5 to 7.5
• Appearance	straw colored liquid						
• Specific gravity	1.2 to 1.4						
• pH (neat)	6.5 to 7.5						
<b>Recommended Treatment</b>	<p><b>As a Well Development Aid</b></p> <ul style="list-style-type: none"><li>• Determine volume of water in screen area and double the calculated volume to account for water in gravel pack and formation interface <i>or</i> determine the static volume of water and add 50% excess.</li><li>• Once the water volume is determined, calculate the required treatment volume of AQUA-CLEAR PFD dispersant by the following formula: <b>AQUA-CLEAR PFD dispersant (gal or L) = 0.002 x Water Volume (gal or L)</b></li></ul> <p><i>This equates to one gallon of AQUA-CLEAR PFD dispersant for every 500 gallons of water (0.2% by volume) or 2.0 liters of AQUA-CLEAR PFD dispersant for every cubic meter of water.</i></p> <ul style="list-style-type: none"><li>• Mix thoroughly before introducing into well.</li><li>• The preferable application method utilizes a tremie line with the product applied into the screened area.</li><li>• If necessary, the AQUA-CLEAR PFD water solution may be poured into the well.</li><li>• Mixture should be thoroughly blended in well, then agitated using a surge</li></ul>						

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Rev. 5C009 - IDP 258

Because the conditions of use of this product are beyond the seller's control, the product is sold without warranty either express or implied and upon condition that purchaser relies to his own test in determining the suitability for purchaser's application. Purchaser assumes all risk of use and handling of this product. This product will be replaced if defective in manufacture or packaging or if damaged. Except for such replacement, seller is not liable for any damages caused by this product or its use. The statements and recommendations made herein are believed to be accurate. No guarantee of their accuracy is made, however.

- Recommended Treatment (continued)**
- and swab, jetting, or other developmental technique repeatedly every two hours for a period of up to 24 hours.
  - Pump to waste until turbidity clears up and then connect well to distribution system.

**As a Mud Thinner**

- Start by adding one pint of AQUA-CLEAR PFD dispersant to 500 gallons of mud. Increase concentration until desired viscosity is achieved.

<b>Well Capacity Chart (Gallons per Foot)</b>					
<b>Well Diameter (Inches)</b>	<b>Well Capacity in Gallons/ft</b>	<b>Well Diameter (Inches)</b>	<b>Well Capacity in Gallons/ft</b>	<b>Well Diameter (Inches)</b>	<b>Well Capacity in Gallons/ft</b>
2	0.2	12	5.9	24	23.5
4	0.7	14	8.0	26	27.6
6	1.5	18	13.2	30	36.7
8	2.6	20	16.3	36	52.9
10	4.1	22	19.7	48	94.0

<b>Well Capacity Chart (Liters per Meter)</b>					
<b>Well Diameter (millimeters)</b>	<b>Well Capacity Liters/meter</b>	<b>Well Diameter (millimeters)</b>	<b>Well Capacity Liters/meter</b>	<b>Well Diameter (millimeters)</b>	<b>Well Capacity Liters/meter</b>
51	2.0	305	73.0	610	292.0
102	8.1	356	99.3	660	342.6
152	18.3	457	164.2	762	456.1
203	32.4	508	202.7	914	656.8
254	50.7	559	245.3	1219	1167.7

*Note: The volumes in these tables show only the volume of water in a 1 foot or 1 meter section of a given size of screen. Excess volume must be included to account for water present in the formation interface and gravel pack.*

**Packaging** AQUA-CLEAR PFD dispersant is packaged in a 5-gal (19-liters) plastic pail or 1-gal (3.8-liter) plastic container.

**Availability** AQUA-CLEAR PFD dispersant can be purchased through any Baroid Industrial Drilling Products Retailer. To locate the Baroid IDP retailer nearest you, contact the Customer Service Department in Houston or your area IDP Sales Representative.

**Baroid Industrial Drilling Products  
Product Service Line, Halliburton  
3000 N. Sam Houston Pkwy E.  
Houston, TX 77032**

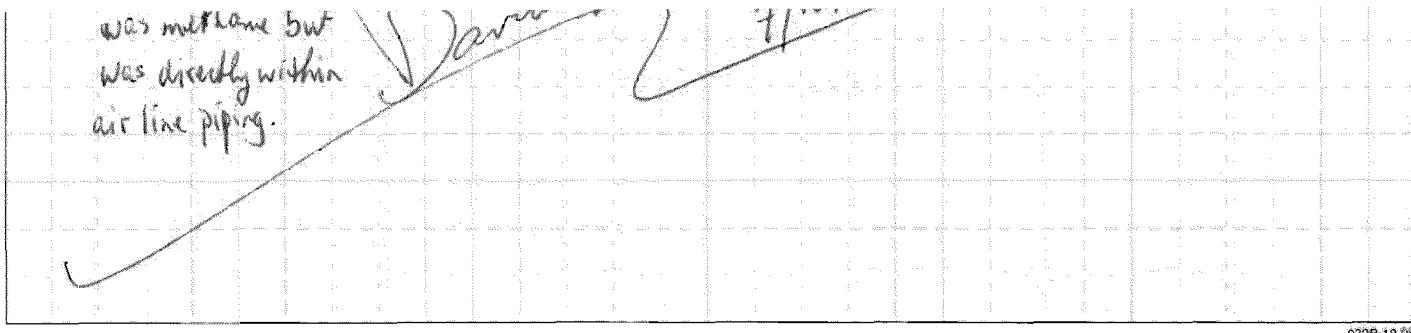
<b>Customer Service</b>	(800) 735-6075 Toll Free	(281) 871-4612
<b>Technical Service</b>	(877) 379-7412 Toll Free	(281) 871-4613



# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	16	10
	NO.			
	SHEET	1	OF	2

<p>PROJECT NAME: EPA Pavillion Drilling</p> <p>FIELD ACTIVITY SUBJECT: Well Development</p> <p>DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:</p> <p>(b)(6) privacy [Landowner]</p>	<p>PROJECT NO.: 139703</p> <p>Well-1</p>
<p>0705 Arrived Well-1. Began paperwork/calibration.</p> <p>Sirius - Zero Cal - pass</p> <p>Span = LEL = 6.6% O<sub>2</sub> = 14.8% H<sub>2</sub>S = 10 ppm CO = Pass</p> <p>ISO = 94.9 ppm - PASS</p> <p>2100P Turbidimeter (Rented from Findlay) ID# LVE 002818</p> <p>Gellex turbidity tests:</p> <ul style="list-style-type: none"> <li>1) 0-10 NTU = Should be 5. <del>Read</del> Reading = 5.47 within 5%</li> <li>2) 0-100 NTU = 55 Reading = 54.8 "</li> <li>3) 0-1000 NTU = 526 " = 523 "</li> </ul> <p>0800 Health targets/safety meeting / JSA. EPA personnel present. Very possible for methane appearance today during well development. Discussed appearance situations and actions to take.</p> <p>0815 Began calibration of VSE 556. - all ok</p> <p>0920 BLY began pulling inner air piping. BTW = 17.6 ft BGS = 2 Turns/A. Ensign</p> <ul style="list-style-type: none"> <li>- Will begin by swabbing well for ~1 hr. Empty-discharging water into 21,000 gal frac tank, no efflux</li> <li>- Breathing Air 0.0% LEL, O<sub>2</sub> = 20.8%, H<sub>2</sub>S = 0 ppm, CO = 0 ppm</li> <li>- BLY personal mobbing/gathering equipment to move to Randall</li> </ul> <p>1040 BLY (Kess) arrives back at site</p> <p>1140 Began inserting swab. (Swab 5 ft long 2" iron rod w/ a 1/2" long by 3.7" diameter block)</p> <ul style="list-style-type: none"> <li>- Lowered by winch line to bottom of well (480 ft), marked line, raised 25 ft, marked line</li> </ul> <p>1200 Began swabbing. With swab for the. Measured air quality while singing. 0% LEL, 0.0ppm H<sub>2</sub>S</p> <p>EPA: Ken Jewell monitors breathing air/air in well periodically w/ FID, all 0.0ppm. 0 background for all</p> <p>1300 Began pulling swab.</p> <ul style="list-style-type: none"> <li>- K. Jewell obtains background of frac tank: through monholes. 0.0% Methane, CO, Landfill gas meter forced. Methane CH<sub>4</sub>.</li> </ul> <p>1335 Began inserting air piping. Will conduct 1st lift from 140ft.</p> <p>1400 Began 1st lift</p>	
<p>VISITORS ON SITE:</p> <p>Brent Longyear, John Turner, Adam Ensign EPA - Ken Jewell, Dan Grillo</p>	<p>CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS, AND IMPORTANT DECISIONS</p> <p>#10 water recharged into Locken well-1 during air lift development. Recommended mechanical barrier to remove fines forced into screen by air.</p>
<p>WEATHER CONDITIONS:</p> <p>sunny, clear, warm (60°), slight breeze, n/a</p> <p>sunny, clear, hot (85°), windy - 7-11</p>	<p>IMPORTANT TELEPHONE CALLS:</p> <p>_____</p>
<p>SHAW E&amp;I PERSONNEL ON SITE: D Kessle</p> <p>SIGNATURE: David Kessle</p>	
<p>DATE: 7/16/10</p>	



EPAPAV0025249



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	19	10
NO.				
SHEET	1 OF	2		

PROJECT NAME:	EPA Pavilion Drilling	(b)(6) privacy [redacted]	PROJECT NO.:	139703
FIELD ACTIVITY SUBJECT:	Water level Measurement/Swab	(b)(6) privacy [redacted]	MW-1 / Drilling Equipment Set-up at	MW-1

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

- (b)(6) privacy [redacted] MW-1. Arrived. Began paperwork.
- 0745 Held tailgate safety meeting / JSA. C. Seal + crew will continue rig/tooling set-up on Rendall Ave. Discussion on well development: BLY considers Locker MW-1 basically complete. Development consists of mud removal/aqua. clay insertion/removal/and our lift water removal. Shaw considers development only activities associated w/ water removal. C. Seal recommends discussion w/ Russ Oba, EPA. Shaw on what development.
- 0830 Left [redacted] MW-1. Will first attempt to locate static water. Suggested lowering sand line or raising out air piping to find wet rock. If at least 20 ft water present, will begin singing action only. Will conduct no further air lifting. Mechanical barrier enroute to job site but will arrive either later today or on Monday (shipped via truck, ground, UPS).
- 0840 Arrived Locker MW-1. Began cal of Sitemaster. Cal zero - pass
- Cal Span: LEL = 55%, O<sub>2</sub> = 20.8%, H<sub>2</sub>S = 10 ppm, CO = 386 ppm
- Cal Span (VOC) = VOC = 100 ppm
- 0900 D. DiGiulio arrives on-site. Explains situation status.
- 0925 Opened valve on [redacted] MW-1. EPA + Shaw measured air quality. (Heavy quantity of gas escaping, says that water did move into well)
- Shaw PID = VOC = 3.2 ppm EPA: FID = 5.0 ppm (VOC) PID = (VOC) 3.1 ppm, CO = 0 ppm
- 0930 Boat began removing air piping. Have 160 ft piping removed. Pipe wet-condensation. Will have to go back into borehole w/dry line to be sure where water level is.
- 1035 Air rod pulled. Began insertion of swab on wire line.
- 1050 Determined 94 ft water in well. BTW = 886 ft bgs 16.5 hrs / 94 ft water 5.7 ft receding per hour
- 1100 Called D. DiGiulio. Informed that 94 ft water present. Will scrub in 1 hr steps.

VISITORS ON SITE: Boat Longyear - John Turner, Body Seal, Russ Oba, Adam Ehinger, Riley	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
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EPA-Don DiGiulio

## WEATHER CONDITIONS:

cloudy, calm, warm (65°) - A.M.  
partly cloudy, slight breeze, hot (90°), p.m.

## IMPORTANT TELEPHONE CALLS:

1100 Reported water column to D. DiGiulio

SHAW E&amp;I PERSONNEL ON SITE: David Kessler

SIGNATURE: David Kessler

DATE: 7-17-10

EPAPAV0025250



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	19	10
NO.				
SHEET	1	OF	2	

<p>PROJECT NAME: EPA Pavillion Drilling  <span style="font-size: small;">(b)(6) privacy [Landowner name]</span></p> <p>FIELD ACTIVITY SUBJECT: NW-1 Air Rotary, Set-up / Air + Mud Rotaty to 80ft</p> <p>DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:  <span style="font-size: small;">(b)(6) privacy [Landowner name]</span></p>	<p>PROJECT NO: 139703</p>
<p>0700 Arrived [REDACTED] 106-1</p> <p>0710 Received call from Kevin Jackson. Informed that <sup>new</sup> Waste development firm being obtained. New firm should be able to take soil cuttings, mud, dev water.</p> <ul style="list-style-type: none"> <li>- Sample for oil/grease + pH on development water.</li> </ul> <p>0735 Held tailgate safety meeting / TSA.</p> <p>0830 Begun air rotary drilling w/ 17½" roller-tricone bit.</p> <p>0910 Arrived [REDACTED] with check roll-off bins for dryness before calling Wyoming Waste for transfer of bins to landfill again.</p> <p>0920 Only able to remove 1 of the 2 front end caps on roll-off bin (Each bin has 2 openings; 1 bin has <del>both</del> 1 valve + 1 capped valve open, other bin has only valve open). Locker box #2 was returned Thursday (7/15) has only valve open. Material in valve appears to be dry. Locker box #3 has both valve and end cap removed. Soil near end cap is un-powdered "mud".</p> <ul style="list-style-type: none"> <li>- With call and schedule picking up w/ Wyoming Waste for both boxes.</li> <li>- 2 roll-off bins w/ mud and small bin remain. Mud will be removed by vac truck.</li> </ul> <p>0945 Arrived back at [REDACTED]</p> <ul style="list-style-type: none"> <li>- Called K. Jackson (Shaw - IDW Mg). Reported <del>what</del> status of filter boxes. Will attempt disposal again at Landfill.</li> <li>- Called Wyoming Waste (Michelle Forte). Scheduled pick-up of filter boxes. Driver will return to [REDACTED] this again this afternoon or Tuesday for boxes. Informed to drop empty boxes at [REDACTED]</li> </ul> <p>1015 Received call from J. Ty Buskis (Shaw Tech Mg). Informed of status, drilling + development. Will request 3 day turn on dev water samples.</p> <p>1145 Completed collection of additives. Collected 10 Quart Mason jars of DEZ Mud Gold 2) Dense Soda Ash 3) Quik Trac Gold 4) <del>DEZ</del> Penetrol (liquid) 5) Quik-CEL 6) Aquas-Clean (liquid) and delivered to EPA. Made CEC for their use (no copy).</p>	
<p>VISITORS ON SITE:</p> <p>Boat Langman - Body Seal, Russ Otto, Zoley,  <span style="font-size: small;">[REDACTED]    Alan Brzg</span></p>	<p>CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:</p> <p>[REDACTED]</p>
<p>WEATHER CONDITIONS:</p> <p>sunny, clear, cool (65°) warming, calm - a.m.    sunny, clear, hot (80°), calm - p.m.  <small>Strong gusts 30-40 mph and increases 1400</small></p>	<p>IMPORTANT TELEPHONE CALLS:</p> <p>Wyoming Waste 307-886-5354</p>
<p>SHAW E&amp;I PERSONNEL ON SITE:</p> <p>David Keesh, Jenny Prince</p>	<p>SIGNATURE: David Keesh</p>
<p>DATE: 7/18/10</p>	

EPAPAV0025251



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG CONTINUATION SHEET

DAILY LOG	DATE	7	19	10
	NO.			
	SHEET	2	OF	2

PROJECT NAME: EPA Pavilion Drilling

PROJECT NO.: 139703

FIELD ACTIVITY SUBJECT: Air Rotary, Set-up on [REDACTED] New 1 / Air-Mud Rotary to SOFT

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

(b)(6) privacy [Landowner]

(b)(6) privacy [Landowner]

- 1200 BLY left [REDACTED] to obtain additional equipment -  
- BLY returns w/ casing, material. Mud tub system working.
- 1400 Began ~~drilling~~ borehole for temporary conductor casing for 17½" borehole.
- 1515 Director installed on temporary casing
- 1525 Installed 1st c30 ft air rod. Shaw H+S performing heat stress tests on BLY
- 1445 Contacted Findlay equipment to check on availability of 1000 ft water lead indicator.  
Findlay only has maximum length - 300 ft.
- 1630 System all hooked together ready to begin drilling from 20 ft.  
- 17" roller cone drill bit stuck inside temporary casing. Advance bit, casing drops,  
pull bit up, disk bit raises casing.  
- Began construct weld brace to secure temporary casing in place.
- 1655 Began drilling with mud at 20 ft.
- 1910 Drilled to SOFT. End of drilling. D. Bribilio arrives on site. Calculates further.  
No word on mechanical issues.
- 1930 Left site

David Kent 7/19/10



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	4	20	10
	NO.			
SHEET	OF	2		

139703

PROJECT NAME: EPA Pavilion Drilling

PROJECT NO.: 130722-  
139703

FIELD ACTIVITY SUBJECT: Mud Rotory

(b)(6) privacy [Landowner name]

MW-1 conductor Casing Setting/Development Locker MW-1

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

(b)(6) privacy [Landowner name]

0700 Arrived [REDACTED] MW-1

0720 Boat moves, began paperwork

0810 Held tailgate / TSI. Mechanical buster / indicator present in Riverton W.H.  
be brought to site by BLY site mg

0840 Began drilling w/ mud to 20 ft.

0920 Completed drilling to 100 ft w/ 17 1/2" bit. Cleaning out borehole

1000 Began removal of tools for insertion of 10". J Prince left to Riverton for FID meter.

1015 BLY Russ Otto arrives on-site w/ mechanical buster + water level indicator

- Inform R. Otto that will need to wait until J. Prince returns w/ FID meter in order to monitor potential vapors (methane) before when gas flange on well is opened.

1055 Arrived Locker MW-1 w/ EPA - Don DiGuilio

- Gauged air/gas from well. Methane present. Reading w/ FID = 110 ppm, PID = 3 ppm

1110 Gauged water level = [REDACTED] ft to water, 209 ft water column

(b)(6) privacy [Landowner name]

1145 Returned Don (EPA) to MW-1 PBS film crew in parking area of [REDACTED]

- Horse-area access entry area sign posted "For authorized personnel only"

- J. Prince arrives at Randall's w/ FID. Began review/calibration.

983  
7/11  
209

1225 Arrived back at Locker MW-1. Spoke w/ Rain. For last on Refining. Received filters for roll-off bins when they are emptied.

1230 Began calibration of VSI.

1250 Began calibration of 2100P Turbidity meter, rented from Shaw, Findlay, OH office. Serial #

LVE 002818

0-10 NTU = 6.2 NTU } GELEX Standards

0-100 NTU = 55.4 NTU }

0-1000 NTU = 525 NTU }

1255 Began development of Locker MW-1. Used mechanical buster.  
3 gallons per buster.

## VISITORS ON SITE:

BLY - Cody Seal, Adam Ensign, Russ Otto, Riley Oshun

EPA - Don DiGuilio

## CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

## WEATHER CONDITIONS:

sunny, clear, cool (55° but warming), calm or a  
sunny, clear, hot (85°), slight breeze - pm.

## IMPORTANT TELEPHONE CALLS:

Findlay (Shaw) - Order additional VSI calibration 10/30

SHAW E&amp;I PERSONNEL ON SITE: David Kessel, Jenny Price

SIGNATURE: David Kessel

DATE: 7/20/10

EPAPAV0025253



Shaw Environmental & Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG CONTINUATION SHEET

DAILY LOG	DATE	7	20	10
	NO.			
SHEET 2 OF 2				

(by) privacy [Landowner name]

PROJECT NAME:	EP4 Pavilion Drilling	4W-1	PROJECT NO.: 139703
FIELD ACTIVITY SUBJECT:	Hub Retain/Conductor Casing Instill-Setting/Development <del>Ponded</del> <sup>DK</sup> Block Plw-1		
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:			
<p>1320 Hole developed for 25 minutes. Only 16 gallons removed. Water very silty - 999 NTU.</p> <ul style="list-style-type: none"> <li>- Roderick must go to bottom of well, trip inlet, then sand/silts brought into bailed (sucked in vacuum)</li> <li>- Will record readings every hour instead of 1/2 hr.</li> </ul> <p>1405 Recorded first water quality reading. 999 NTU / DTW = 792.8 ft</p> <p>1445 Completed measuring Depth to water. (line stuck to side, line heavy, ~800ft) DTW = 792.8 ft. Developed water from bailed emptied (released) into 55 gal drum. Toted 21 gallons water removed via 5 gal bucket, emptied into frac tank.</p> <ul style="list-style-type: none"> <li>- At least 1" very fine sand present on bottom of drum.</li> <li>- Measured DTW 10x 40 min</li> </ul> <p>1500 Russ Otto (BLY - Mg) arrives on-site. Show him fines "sugar sand" encountered. Suggests that material may be mud from drilling - possible.</p> <ul style="list-style-type: none"> <li>- Development will take some time, 4 to 5 days? To lower NTUs to 10. Within bare EPA limit of 1000 NTU? No issues? Tool with quality reading? Reliability not mentioned? Possible risk?</li> <li>- Water sample very muddy. Definitely 99.9 or higher. Instrument produces E.3. error message indicating low light or dilution necessary.</li> </ul> <p>1705 Collected next round water quality readings. ~1' Heavy mud flotation line at bailed.</p> <p>1814 DTW = 843 ft. → Surgeon no. 5 ft. in 4 min.</p> <p>1818 DTW = 842. ft</p> <p>1830 Reviewed <del>drilling</del> development logs for yesterday/today.</p> <p>1845 Arrived Randall Nov-1</p> <ul style="list-style-type: none"> <li>- BLY grouting in casing</li> </ul> <p>1945 Completed grouting. Used 65 bags grout. Still need to add ~10 additional bags (out of 200)</p> <p>2000 Completed daily drill logs. Left site.</p>			

2/20/10

Keay

David



Shaw Environmental &amp; Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG

DAILY LOG	DATE	7	21	10
NO.				
SHEET	1 OF 2			

PROJECT NAME: EPA Pavillion Drilling		PROJECT NO.: 139703
FIELD ACTIVITY SUBJECT: Licker Well Site Development		(b)(6) privacy [Landowner name] Well BOP install
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:		
<p>0655 Met Wyoming Waste leaving Locks. Informed them to bring 1 roll-off bin to Landfill and that they can return the other bin to rear for rest. Wyoming Waste had no idea where bin to rest was located. Informed them M. H. [REDACTED] They said they can not talk to Amblinton. Informed them to take the [REDACTED] Wyoming Waste said that they were taking cuttings to [REDACTED] landfill. Less of problem w/water.</p> <p>(b)(6) privacy [Landowner name]</p> <p>0715 Arrived [REDACTED] NW-1.</p> <p>0720 BLY (Russ Otto) arrives on-site. Said that they were heading to Locks. Have hrs meeting there at Licker NW-1. J. Prince at [REDACTED] calibrating FID/PID.</p> <p>(b)(6) privacy [Landowner name]</p> <p>0745 Shaw arrives Locks. EPA had snuffed flag when broken. 70 ppm reading.</p> <p>0800 Measured depth to water in Licker NW-1. DTW = 822 ft</p> <p>0810 Held H+S/TSA. Discuss situation that Shaw/Boat needs to meet at one location/home (meeting thru - part ways. Discussion by Boat about this. Informed them - that is why must be</p> <p>0820 Began calibration at YSI</p> <p>0825 Began boiling. Turned wash line (yours idle spec) up 1 gear, boat travels up/down much faster. Calibration of 2100P Turbidimeter</p> <p>Greely Standards 1-10 NTU = 5.37 NTU</p> <p>10-100 NTU = 56.0 NTU } ok</p> <p>0-1000 NTU = 526 NTU }</p> <p>0845 Received call from M. Frick (Wyoming Waste). Said that others are at Landfill but not able to dump because they do not have documentation (Believe it not be analytical). Gary has K. Jackson's number &amp; will to call &amp; get analytical to send to landfill.</p> <p>0900 Heavy soil (Drilling Mud) being collected by barge.</p> <p>0930 Talked w/D. Dibrell in about well development. Informed him that well dev. could take (wild guess) another 5 days. (Heavy mud from barge). He will call well sampling crew and inform them to come sometime in August to sample.</p>		
VISITORS ON SITE: BLY, Russ Otto, Cody Seal, Riley Estes, Adam Engen	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:	
WEATHER CONDITIONS: Sunny, clear, cool (52°), slight breeze - n, w partly sunny, rain (1200-1300), warm (85°), windy p-n.	IMPORTANT TELEPHONE CALLS: Anchor Environmental, Wyoming Waste David Kendall JK Tyburski	
SHAW E&I PERSONNEL ON SITE: David Kessler, Jenny Prince		DATE: 7/21/03
SIGNATURE: David Kessler		EPAPAV0025255



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# FIELD ACTIVITY DAILY LOG CONTINUATION SHEET

DAILY LOG	DATE	7	21	10
NO.				
SHEET	2	OF	2	

PROJECT NAME:	EPA Pavilion Drilling	(b)(6) privacy [Landowner info]	PROJECT NO.:	139703
FIELD ACTIVITY SUBJECT:	Installation of BOP drilling set-up			Well Development Locker Mw-1
DESCRIPTION OF DAILY ACTIVITIES:	Site activities			
1025	Took next water quality reading. DTW = 868 ft. Turbidity still extremely high. Will change water quality reading time intervals to 2 hr until water attempts to clear.			
-	Called Dan Kendall - Status of contract w/ Anchor			
-	Called Jim Seggard (Anchor). Informed him to send insurance certificates to D. Kendall (Shaw). Gave him directions to Locker Mw-1.			
-	Called Joe Tybuski (Shaw - Tech mg). Informed of status w/ development & drilling. J. Tybuski will push along development of P.O. to allow Anchor to come & use mud bins.			
1140	Well development down. P.M. began lifting water out of well w/ bucket.			
-	Called Rain for fast to order additional mud bin. No need. Mud placed in some type bin as what soil cuttings <del>are</del> are in.			
1205	Rain begins			
1205	DTW = 873.8 ft. Buckets working fine. (External) PC 55 ft. Break at 1/4" (big enough - waste plume stopped due to broken pipe + mud). Shredded bins. Both still full of soil cuttings. Later, by 2nd 1/3.			
1300	Rain ends. Spoke w/ Brian. Reported to me that Wyoming Waste Drivers said 1 bin was accepted, other bin too wet. (Shaw did not open entirely each bin)			
-	Wolf call and order another bin.			
-	Weathered installing Blow Out Preventer / Pressure Testing at <span style="background-color: black; color: black;">██████████</span> MW-1			
1330	Arrived Locker Mw-1. Checking static. Total 21 gal removed. Did not check water quality, water added / in 55 gal drum. Water is not fresh.			
1340	Called Rain for fast (Brad Chane) & order another filter box. He said no problem, but unsure where whom he will it will come from. Does not have any locally. Once found, he will keep me informed of delivery time.			
1500	Water changing color from a dark brown to more of a reddish brown or brown color.			
1600	Collected water quality reading. DTW = 927.7 ft. pH still high 11.2.3. <sup>1/2" dark gray</sup> <sup>Very fine</sup> <sup>silt</sup> <sup>on down 30 ft</sup>			
1620	Continued backfill. Rain begins			
1700	Received call from Mr. James Wilson, Contractor for Anchor Environmental. Give directions to Locker site (through 4 lost cell phone calls). Deliver coming Thursday to remove mud.			
1715	Received call from Brad Chane (Rain for fast). Located filter box near Denver. Here at site Thursday.			
1800	Took last water quality reading. Turbidity 999 NTU, brown. Static 970 ft (DTW)			
1830	Left site.			

- 1010 Tim (EPA) arrives to monitor well (71m Langford)  
 1025 Begin drilling w/ mud from 100 Ft w/  $9\frac{1}{2}$  tri-cone bit.  
 1045 2 vac trucks / 1 roll-off relocation truck arrive at [REDACTED] (b)(6) privacy [Landowner name]. Informed of directions back to Lockers where mud tubs are. Inquired where to take mud, informed him that that was unknown. Call his supervisor.  
 - spoke w/ Russ Oto. DTW at Locker HW-1 ~940 ft. (only 40 ft water). Singing well.  
 - Recommended to leave valve slightly open this evening. Due to pressure in well, water was not able to fully recover. (Probably able to obtain >40 ft).

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
Brent Longfors - Co-Op seat, Greg Cottler, Adam Lasson, Russ Oto EPA-Dom Director, Tim Langford	—
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
Sunny, clear (65°) warm-calm - a.m. Sunny, clear (85°) hot, windy - p.m.	Anchors Environmental
SHAW E&I PERSONNEL ON SITE:	David Keech, Jenny Price
SIGNATURE:	DATE: 7/26/11



Shaw Environmental & Infrastructure, Inc.

# FIELD ACTIVITY DAILY LOG CONTINUATION SHEET

DAILY LOG	DATE	7	22	10
NO.				
SHEET	2 OF 2			

PROJECT NAME: EPA Pavillion Drilling

(b)(6) privacy [Landowner]

PROJECT NO.: 139703

FIELD ACTIVITY SUBJECT: Well Development

Pav-11 Mud Drilling

Pav-1

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

(b)(6) privacy [Landowner] (b)(6) privacy [Landowner]

1400 Well development crew arrives at [REDACTED] Pav-1 swabbed for the, braked dry.

1700 D. DiGilio (EPA) leaves site. Requests email every evening.

1830 Completed drilling Blewant hole. Began pulling rods.  
Drilled to 295 ft

- Tim La Guard will arrive at site tomorrow at ~1100 to perform air monitoring of mud  
while J. Prince continue to develop well at Lockin

1905 Left site

